Company Name:	**Job Identification:** Equipment Operator Underground Coal **Type of Equipment:** Remote Control Continuous Mining Machine **Make:** Joy **Model:** CM14 **Year:** **Use:**
Mine Name:	
Date of Analysis:	

Pre-Assessment

Pre-requisites: (Examples)

Company Policy
Roof/Rib Control Plan
Ventilation, Methane and Dust Control Plan
Fire-fighting and Emergency Evacuation Plan
Co Monitoring Plan
Clean-up Program
Maintenance Program
HazCom Program
Mining Sequence Plan
Operational, Maintenance and Remote Sections of Technical Service Manual

- Each potential operator should review the remote operation section of technical service manual
- Each potential operator should have a period of practice with the remote box and should explain each control and it's function to the trainer
- Schematic Diagrams

Videos:

- VC 945 – Stay out of the Danger Zone (MSHA)
- Cripple Creek Exercise (MSHA-NIOSH)

Duty 1: Pre-shift Activities (checks before going underground)

The instructor will describe the machine, the manufacturer, the model, and its purpose. Instructor will discuss the importance of a daily self-assessment for work, communication with prior shift, and required PPE.

Learner will describe the machine, manufacture, model and purpose. Learner will also be able to explain the importance of each pre-shift activity.

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Assess individual's fitness to work				
Communication with prior shift • Conditions • Locations • Productivity • Maintenance • Pre-shift inspections				
Obtain supplies				
Obtain PPE	Examples; Hearing protection, respirator, self-rescuer, safety glasses, knee pads, gloves, vests/straps			
Obtain Gas Detection Equipment				

Duty 2: Start of Shift Activities

The instructor will demonstrate how to conduct a safe and complete workplace examination and pre-operational inspection of the continuous mining machine, explaining the importance of each task/ step, why they are conducted, and how to implement appropriate controls.

The learner will conduct a safe and complete workplace examination and pre-operational inspection of the continuous miner, point out and explain checks made to each area throughout the workplace, checks of equipment components prior to and after powering on equipment, and checks to ventilation parameters. Learner will provide necessary information about each check and demonstrate ability to implement appropriate controls.

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Walk cable • Check cable condition				
Visually check roof/rib conditions • Scale/support if needed				
Power Off Checks • Check fire suppression (manual) • Check machine maintenance • Check water sprays • Check condition of miner bits				
Power on machine				

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Check Ventilation Parameters • Check water sprays • Check scrubber screen/duct work • Check water pressure				
Check methane monitor				
Examine Face • Visually check roof/rib conditions • Check for Date/Times/Initials • Check site lines • Scale/support if needed • Conduct gas checks • Update ventilation as needed • Place unsupported roof sign • Place streamers 2nd row				
Check to see if machine is clean				

Duty 3: Tramming

The instructor will demonstrate and explain the remote control operation of the continuous mining machine, by explaining and demonstrating each control and its function. The instructor will also demonstrate and explain the importance of the operator and helper's location while tramming the mining machine and communicating intention to others in area.

The learner will tram the continuous mining machine using the remote control box after a period of practice to learn the controls. The learner will demonstrate and/or explain proper location of operator and helper and explain the importance of communication with others in the area while tramming the mining machine.

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Plan and communicate your move				
Signal/communicate intentions to others				
Get another person to assist				
Position yourself and helper for tramming				
Check area for other people and obstacles				
Handle cable				
Signal before moving machine				

Duty 4: Cutting Coal

The instructor will demonstrate and explain the importance of operator location (red zones), positioning mining machine for first cut, taking the cut, communicating with shuttle car operators, following cut sequence and shut-down sequence.

Learner will demonstrate safe operation of mining machine and explain each activity involved in cutting coal, the associated risks, and how to implement appropriate controls.

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Maintain ventilation				
Take a gas check				
Position for first cut • Pan in float position				
Assess your location • Visibility • Air				
Turn sprays on				
Start scrubber/cutters/conveyor				
Position tail in shuttle car				
Take first cut • Sump in at top • Shear down				
Signal for shuttle car operator				
Watch conveyor tail				

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Watch for shuttle car to be full • Watch for shuttle car signal (flash lights)				
Stop loading/possible precut				
Follow sequence of cuts				
Check site lines				
Determine length of cuts • 20’ cuts • Extended Cuts				
Shut down sequence – end of cut • Turn off conveyors • Turn off cutters • Allow scrubber to time out • Turn pump off				
Clean up (as needed)				
Place unsupported roof signs (as needed)				

Duty 5: Place Change

Instructor will demonstrate and explain the importance of each task involved in changing places with the continuous mining machine including the associated risks and how to implement appropriate controls.

Learner will demonstrate ability to change places with continuous mining machine explaining technical aspects of each task involved including associated risks and how to implement appropriate controls.

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Communicate intention with Shuttle Car Operators				
Follow mining sequence				
Handle Cable • Back miner up				
Observe position of head and tail				
Use caution around run-throughs				
Examine next place				
Remove cables				
Tram miner to next place				

Duty 6: Turn Crosscut (Right/Left)

Instructor will demonstrate and explain each task/step involved in turning crosscuts with continuous mining machine, including associated risks and how to implement appropriate controls.

Learner will demonstrate the ability to turn a crosscut left and right with the continuous mining machine explaining technical aspects of each task involved including associated risks and how to implement appropriate controls.

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Establish ventilation				
Check for gas				
Measure crosscut				
Draw angle				
Establish mark for turning point				
Start scrubber/cutters				
• Turn X-cut to the right (lst choice) o Take out (mine) apex				

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Turn X-cut to the left o Take out (mine) apex				

Duty 7: End of Shift

The instructor will demonstrate and explain the importance of each task/step involved in the end-of-shift activities including reporting procedures and communicating with on-coming shift.

Learner will demonstrate and explain post-operation activities including completion of any record required and communicating with on-coming shift.

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Park machine				
Change bits • De-energize miner at machine and turn pump control switch to off				
Service machine • Lubricate machine				

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Check for defects				
Check and clean sprays • Lower head to ground • De-energize machine at the power box				
Clean machine				
Follow clean-up program				
Update ventilation				
Setup next cut				
Call out for supplies				
Outside • Charge battery • Charge methane detector • Check self-rescuer • Communicate with oncoming shift				

Duty 8: Unusual Events

The instructor will demonstrate and/or explain the emergency procedures needed to recover from an emergency situation (after the learner has had the time to develop the necessary operating skills).

The learner will demonstrate and/or explain to the instructor the emergency procedures needed to recover from an emergency situation (after the learner feels comfortable with necessary operating skills).

Job Steps	Importance Narrative (Consider Safety, Production, and Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory/ Needs Work	Procedures/Risk Resolution/ Notes/Comments
Pump won't start				
Emergency Stop of machine				
If machine is unattended				
Methane 1% or greater				
Methane 1.5% or greater				
Fire emergency procedures				
Emergency Stop gobbed off				
Roof falls/rib rolls				